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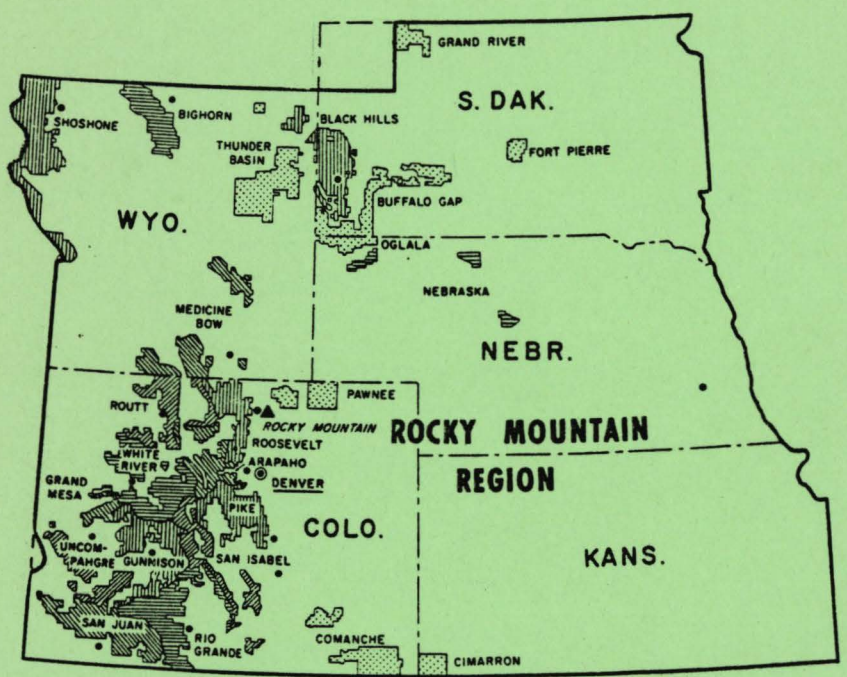
BIOLOGICAL EVALUATION

Dwarf Mistletoe
Arapaho and Roosevelt National Forests
Poudre Ranger District



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BIOLOGICAL EVALUATION

Dwarf Mistletoe
Arapaho and Roosevelt National Forests
Poudre Ranger District

Prepared by: DONALD H. BROWN
Plant Pathologist

Approved by:

GEORGE L. DOWNING
Staff Director
Forest Pest Management

SIDNEY H. HANKS
Deputy Regional Forester
State and Private Forestry

BIOLOGICAL EVALUATION

Dwarf Mistletoe
Arapaho and Roosevelt National Forests
Poudre Ranger District
March 1975

A 30 year old stand of lodgepole pine in the Elk Creek drainage, known as the Ballard Area, was surveyed in September 1972 for the incidence and distribution of dwarf mistletoe. A total of 400 acres in three distinct units was surveyed using the variable size plot, third nearest tree technique at four chain sampling intervals evenly spaced throughout each unit[1] (see attached map). The survey was conducted by trained personnel employed by the Poudre District. The purpose of the survey was to provide information for the land manager to evaluate the feasibility of a precommercial thinning.

The field data was used to obtain yield projections by utilizing the computerized LPMIST programs (Myers, et. al., 1971)[2]. The biological data and projected yields indicate a precommercial thinning would be feasible to increase yields (see attached data sheets). The best yield indicated in the tables is associated with the most intensive level of management using a 30 year cutting cycle. The first cutting at age 30 reduces the dwarf mistletoe to a relatively low level as indicated in the second column of the tables. This was accomplished primarily by thinning from above which removed trees from the dominant and codominant crown classes. In order to obtain the projected yields, the actual thinning must be done in the same way. Among the several alternatives is one showing no thinning at all.

The stand is recommended as a pathologically sound sanitation thinning project. Whether the project is economically feasible is for the land manager to decide from an analysis of the proposed investment.

1/ A survey procedure for evaluating dwarf mistletoe in proposed thinning projects. USDA Forest Service, Region 2 mimeographed report, May 1972.

2/ Clifford A. Myers, Frank G. Hawksworth, and James L. Stewart. Simulating yields of managed, dwarf mistletoe-infested lodgepole pine stands. USDA Forest Service, Res. Pap. RM-72, 15p., 1971.

EVALUATION OF LODGEPOLE PINE DWARF MISTLETOE IN TIMBER MANAGEMENT UNITS

BIOLOGICAL DATA

General Description

Forest: Roosevelt

District: Poudre

Area: Elk Creek

Acres: 400 Site Index: 55

Type and extent of:

Infected boundary: some but not significant

Natural barriers: roads, ridgetops, creek bottoms.

Estimated cost/acre: $40 FY: --

Stand structure description: evenaged stand of precommercial thinning age.

Management plans: reference and date of last plan: Roosevelt TM Plan

Types of products: posts, poles, sawtimber

No. of intermediate cuts: 1 commercial

Year of final cut: 2074

Date of last stand examination or survey: 1972

Proposed Suppression Method

I. Overstory Removal

Acres: _____ Infected residuals/acre and distribution: _____

Age of oldest regeneration: _____ Date of oldest sale: _____

II. Sanitation Thinning

Acres: 400 Est. trees/acre before: 682 after: 347 thinning

Stand age: 30 Percent trees infected: 26 Type of thinning: Precommercial: X Commercial: _____

Impact survey: Date: 9/72

Results (see attached data & project map)

Related information and remarks: _____

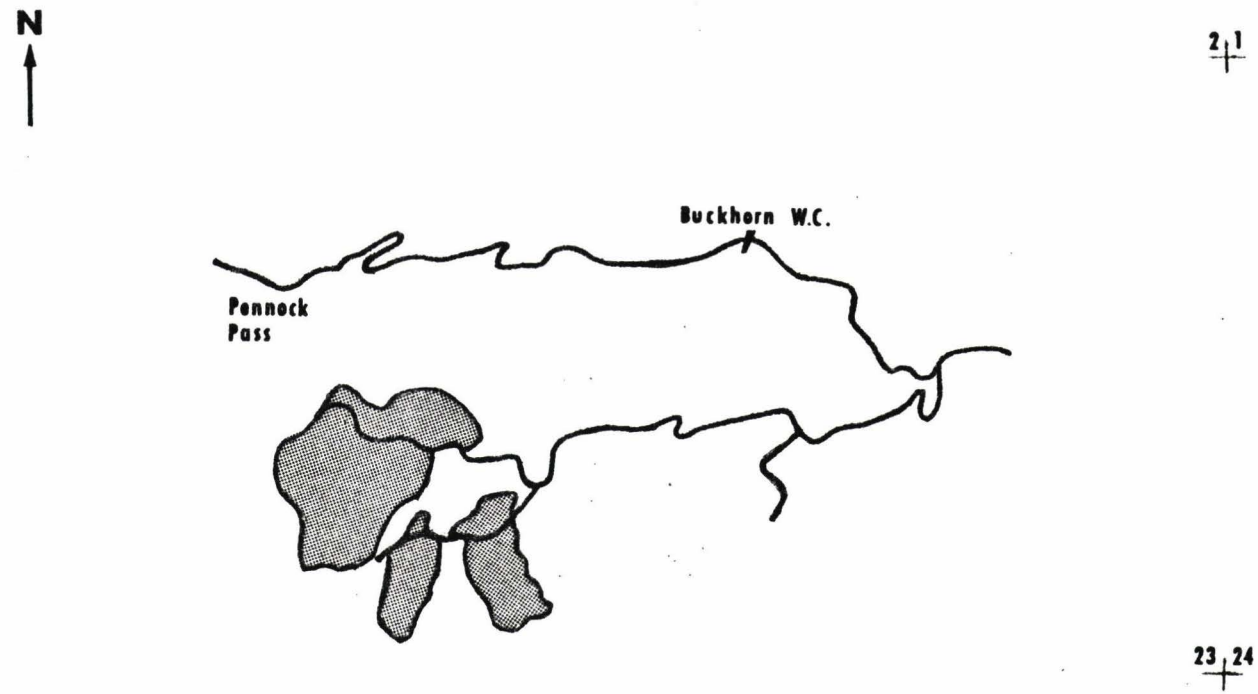
Percent trees with terminal damage: 37% Other damaging diseases or organisms: --

The weeviled trees should be discriminated against as much as possible in the thinning operation.

Date: February 1975

Examiner: D. Brown

Proposed Dwarf Mistletoe Control Project
Elk Creek
Poudre Ranger District
Roosevelt, N.F.



ELK CR.POUDRE ROOSEVELT N.F.

S&PF LODGEPOLE PINE WITH MISTLETOE- YIELD PER ACRE
SITE INDEX 60, 999-YEAR CUTTING CYCLE
THINNING INTENSITY- INITIAL- 999. SUBSEQUENT- 70.

ENTIRE STAND BEFORE AND AFTER THINNING

STAND AGE YEARS	DWARF MST RATE	TREES NO.	BASAL AREA SQ.FT.	AVERAGE D.B.H. IN.	AVERAGE HEIGHT FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME C.FT	MERCHANTABLE VOLUME CF/YR	SAWTIMBER VOLUME B.FT	SAWTIMBER VOLUME BF/Y
30	1.5	682	41	3.3	23	452	0	0	0	0
30	1.5	682	41	3.3	23	452	0		0	
40	2.2	670	61	4.1	30	894	0	0	0	0
50	2.9	658	83	4.8	33	1349	0	0	0	0
60	3.6	629	104	5.5	39	2005	672	11	0	0
70	4.3	584	122	6.2	44	2651	1481	21	0	0
80	5.0	527	133	6.8	47	3110	2295	29	0	0
90	5.7	461	138	7.4	49	3393	2767	31	0	0
100	6.0	391	133	7.9	51	3387	2917	29	0	0
110	6.0	328	123	8.3	52	3208	2848	26	11695	106
120	6.0	275	114	8.7	53	3012	2731	23	11185	93
130	6.0	230	104	9.1	54	2801	2575	20	10594	81

PERIODIC INTERMEDIATE CUTS

TREES NO.	BASAL AREA SQ.FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME CU.FT.	SAWTIMBER VOLUME BD.FT.
0	0	0	0	0

	TOTAL VOLUME	MERCHANTABLE VOLUME	SAWTIMBER VOLUME
TOTAL YIELDS	2801	2575	10594

MINIMUM CUTS FOR INCLUSION IN TOTAL YIELDS-- 500. CUBIC FEET AND 1500. BOARD FEET

DWARF MISTLETOE INFECTION STARTED AT AGE 15. AND RATING WAS 6.0 AT AGE 130.

NOTE THAT NOT ALL SCHEDULED THINNINGS WERE POSSIBLE.

MERCH. CU. FT. - TREES 6.0 INCHES D.B.H. AND LARGER TO 4.0-INCH TOP.

BD.FT. - TREES 6.5 INCHES D.B.H. AND LARGER TO A 6-INCH TOP.

ELK CR.POUDRE ROOSEVELT N.F.

S&PF LODGEPOLE PINE WITH MISTLETOE- YIELD PER ACRE
SITE INDEX 60, 30-YEAR CUTTING CYCLE
THINNING INTENSITY- INITIAL- 70. SUBSEQUENT- 70.

		ENTIRE STAND BEFORE AND AFTER THINNING									PERIODIC INTERMEDIATE CUTS				
STAND AGE YEARS	DWARF MST RATE	TREES NO.	BASAL AREA SQ.FT.	AVERAGE D.B.H. IN.	AVERAGE HEIGHT FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME C.FT	MERCHANTABLE VOLUME CF/YR	SAWTIMBER VOLUME B.FT	SAWTIMBER VOLUME BF/Y	TREES NO.	BASAL AREA SQ.FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME CU.FT.	SAWTIMBER VOLUME BD.FT.
30	1.5	682	41	3.3	23	452	0	0	0	0					
30	.3	347	14	2.7	21	145	0		0		335	27	307	0	0
40	.7	338	36	4.4	28	500	0	0	0	0					
50	1.3	333	57	5.6	32	901	331	7	0	0					
60	2.0	330	78	6.6	38	1490	1023	17	0	0					
60	1.1	218	57	6.9	39	1096	825		0		112	21	394	198	0
70	1.8	215	73	7.9	44	1611	1387	20	0	0					
80	2.5	213	90	8.8	48	2175	1981	25	8095	101					
90	3.2	207	104	9.6	52	2702	2504	28	10462	116					
90	3.2	207	104	9.6	52	2702	2504		10462		0	0	0	0	0
100	3.9	196	116	10.4	54	3170	2977	30	12588	126					
110	4.6	180	121	11.1	57	3455	3258	30	14088	128					
120	5.3	161	118	11.6	58	3453	3264	27	14327	119					
120	5.3	161	118	11.6	58	3453	3264		14327		0	0	0	0	0
130	6.0	139	109	12.0	60	3232	3264	25	14327	110					
									TOTAL YIELDS			3933		3264	14327

MINIMUM CUTS FOR INCLUSION IN TOTAL YIELDS-- 500. CUBIC FEET AND 1500. BOARD FEET

DWARF MISTLETOE INFECTION STARTED AT AGE 15. AND RATING WAS 6.0 AT AGE 130.

NOTE THAT NOT ALL SCHEDULED THINNINGS WERE POSSIBLE.

MERCH. CU. FT. - TREES 6.0 INCHES D.B.H. AND LARGER TO 4.0-INCH TOP.

BD.FT. - TREES 6.5 INCHES D.B.H. AND LARGER TO A 6-INCH TOP.

ELK CR.POUDRE ROOSEVELT N.F.

S&PF LODGEPOLE PINE WITH MISTLETOE- YIELD PER ACRE
SITE INDEX 60, 30-YEAR CUTTING CYCLE
THINNING INTENSITY- INITIAL- 70. SUBSEQUENT- 80.

		ENTIRE STAND BEFORE AND AFTER THINNING									PERIODIC INTERMEDIATE CUTS				
STAND AGE YEARS	DWARF MST RATE	TREES NO.	BASAL AREA SQ.FT.	AVERAGE D.B.H. IN.	AVERAGE HEIGHT FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME C.FT	MERCHANTABLE VOLUME CF/YR	SAWTIMBER VOLUME B.FT	SAWTIMBER VOLUME BF/Y	TREES NO.	BASAL AREA SQ.FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME CU.FT.	SAWTIMBER VOLUME BD.FT.
30	1.5	682	41	3.3	23	452	0	0	0	0					
30	.3	347	14	2.7	21	145	0		0		335	27	307	0	0
40	.7	338	36	4.4	28	500	0	0	0	0					
50	1.3	333	57	5.6	32	901	331	7	0	0					
60	2.0	330	78	6.6	38	1490	1023	17	0	0					
60	1.4	253	64	6.8	38	1227	905		0		77	14	263	118	0
70	2.1	251	83	7.8	44	1820	1553	22	0	0					
80	2.8	248	100	8.6	48	2402	2168	27	8862	111					
90	3.5	238	115	9.4	51	2955	2732	30	11349	126					
90	3.5	238	115	9.4	51	2955	2732		11349		0	0	0	0	0
100	4.2	222	124	10.1	54	3356	3146	31	13166	132					
110	4.9	201	126	10.7	56	3547	3337	30	14252	130					
120	5.6	177	121	11.2	58	3524	3324	28	14418	120					
120	5.6	177	121	11.2	58	3524	3324		14418		0	0	0	0	0
130	6.0	151	111	11.6	59	3256	3324	26	14418	111					
								TOTAL YIELDS				3826		3324	14418

MINIMUM CUTS FOR INCLUSION IN TOTAL YIELDS-- 500. CUBIC FEET AND 1500. BOARD FEET

DWARF MISTLETOE INFECTION STARTED AT AGE 15. AND RATING WAS 6.0 AT AGE 130.

NOTE THAT NOT ALL SCHEDULED THINNINGS WERE POSSIBLE.

MERCH. CU. FT. - TREES 6.0 INCHES D.B.H. AND LARGER TO 4.0-INCH TOP.

BD.FT. - TREES 6.5 INCHES D.B.H. AND LARGER TO A 6-INCH TOP.

ELK CR.POUDRE ROOSEVELT N.F.

S&PF LODGEPOLE PINE WITH MISTLETOE- YIELD PER ACRE
SITE INDEX 60, 30-YEAR CUTTING CYCLE
THINNING INTENSITY- INITIAL- 70. SUBSEQUENT- 90.

		ENTIRE STAND BEFORE AND AFTER THINNING									PERIODIC INTERMEDIATE CUTS				
STAND AGE YEARS	DWARF MST RATE	TREES NO.	BASAL AREA SQ.FT.	AVERAGE D.B.H. IN.	AVERAGE HEIGHT FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME C.FT	MERCHANTABLE VOLUME CF/YR	SAWTIMBER VOLUME B.FT	SAWTIMBER VOLUME BF/Y	TREES NO.	BASAL AREA SQ.FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME CU.FT.	SAWTIMBER VOLUME BD.FT.
30	1.5	682	41	3.3	23	452	0	0	0	0					
30	.3	347	14	2.7	21	145	0		0		335	27	307	0	0
40	.7	338	36	4.4	28	500	0	0	0	0					
50	1.3	333	57	5.6	32	901	331	7	0	0					
60	2.0	330	78	6.6	38	1490	1023	17	0	0					
60	1.7	289	71	6.7	38	1352	976		0		41	7	138	47	0
70	2.4	287	90	7.6	43	1963	1640	23	0	0					
80	3.1	280	108	8.4	47	2569	2295	29	9393	117					
90	3.8	265	120	9.1	51	3058	2811	31	11587	129					
90	3.8	265	120	9.1	51	3058	2811		11587		0	0	0	0	0
100	4.5	244	128	9.8	53	3438	3189	32	13476	135					
110	5.2	218	126	10.3	55	3523	3307	30	13937	127					
120	5.9	189	118	10.7	57	3383	3183	27	13593	113					
120	5.9	189	118	10.7	57	3383	3183		13593		0	0	0	0	0
130	6.0	159	105	11.0	58	3056	3183	24	13593	105					
								TOTAL YIELDS			3501		3183		13593

MINIMUM CUTS FOR INCLUSION IN TOTAL YIELDS-- 500. CUBIC FEET AND 1500. BOARD FEET

DWARF MISTLETOE INFECTION STARTED AT AGE 15. AND RATING WAS 6.0 AT AGE 130.

NOTE THAT NOT ALL SCHEDULED THINNINGS WERE POSSIBLE.

MERCH. CU. FT. - TREES 6.0 INCHES D.B.H. AND LARGER TO 4.0-INCH TOP.

BD.FT. - TREES 6.5 INCHES D.B.H. AND LARGER TO A 6-INCH TOP.

ELK CR.POUDRE ROOSEVELT N.F.

S&PF LODGEPOLE PINE WITH MISTLETOE- YIELD PER ACRE
SITE INDEX 60, 40-YEAR CUTTING CYCLE
THINNING INTENSITY- INITIAL- 70. SUBSEQUENT- 70.

		ENTIRE STAND BEFORE AND AFTER THINNING									PERIODIC INTERMEDIATE CUTS				
STAND AGE YEARS	DWARF MST RATE	TREES NO.	BASAL AREA SQ.FT.	AVERAGE D.B.H. IN.	AVERAGE HEIGHT FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME C.FT	MERCHANTABLE VOLUME CF/YR	SAWTIMBER VOLUME B.FT	SAWTIMBER VOLUME BF/Y	TREES NO.	BASAL AREA SQ.FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME CU.FT.	SAWTIMBER VOLUME BD.FT.
30	1.5	682	41	3.3	23	452	0	0	0	0					
30	.3	347	14	2.7	21	145	0		0		335	27	307	0	0
40	.7	338	36	4.4	28	500	0	0	0	0					
50	1.3	333	57	5.6	32	901	331	7	0	0					
60	2.0	330	78	6.6	38	1490	1023	17	0	0					
70	2.7	326	97	7.4	43	2102	1714	24	0	0					
70	1.6	191	62	7.7	44	1362	1151		0		135	35	740	563	0
80	2.3	188	78	8.7	48	1881	1706	28	6957	87					
90	3.0	184	92	9.6	52	2409	2232	31	9314	103					
100	3.7	175	103	10.4	55	2841	2668	32	11281	113					
110	4.4	162	109	11.1	57	3136	2956	32	12785	116					
110	4.4	162	109	11.1	57	3136	2956		12785		0	0	0	0	0
120	5.1	146	109	11.7	59	3197	3022	30	13308	111					
130	5.8	127	103	12.2	60	3063	2956	27	12958	100					
									TOTAL YIELDS			4110		3519	12958

MINIMUM CUTS FOR INCLUSION IN TOTAL YIELDS-- 500. CUBIC FEET AND 1500. BOARD FEET

DWARF MISTLETOE INFECTION STARTED AT AGE 15. AND RATING WAS 5.8 AT AGE 130.

NOTE THAT NOT ALL SCHEDULED THINNINGS WERE POSSIBLE.

MERCH. CU. FT. - TREES 6.0 INCHES D.B.H. AND LARGER TO 4.0-INCH TOP.

BD.FT. - TREES 6.5 INCHES D.B.H. AND LARGER TO A 6-INCH TOP.

ELK CR.POUDRE ROOSEVELT N.F.

S&PF LODGEPOLE PINE WITH MISTLETOE- YIELD PER ACRE
SITE INDEX 60, 40-YEAR CUTTING CYCLE
THINNING INTENSITY- INITIAL- 70. SUBSEQUENT- 80.

		ENTIRE STAND BEFORE AND AFTER THINNING									PERIODIC INTERMEDIATE CUTS				
STAND AGE YEARS	DWARF MST RATE	TREES NO.	BASAL AREA SQ.FT.	AVERAGE D.B.H. IN.	AVERAGE HEIGHT FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME C.FT	MERCHANTABLE VOLUME CF/YR	SAWTIMBER VOLUME B.FT	SAWTIMBER VOLUME BF/Y	TREES NO.	BASAL AREA SQ.FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME CU.FT.	SAWTIMBER VOLUME BD.FT.
30	1.5	682	41	3.3	23	452	0	0	0	0					
30	.3	347	14	2.7	21	145	0		0		335	27	307	0	0
40	.7	338	36	4.4	28	500	0	0	0	0					
50	1.3	333	57	5.6	32	901	331	7	0	0					
60	2.0	330	78	6.6	38	1490	1023	17	0	0					
70	2.7	326	97	7.4	43	2102	1714	24	0	0					
70	1.8	218	70	7.7	44	1546	1306		0		108	27	556	408	0
80	2.5	216	87	8.6	48	2101	1896	24	7738	97					
90	3.2	210	101	9.4	51	2620	2423	27	10047	112					
100	3.9	198	112	10.2	54	3071	2881	29	12099	121					
110	4.6	182	118	10.9	57	3359	3163	29	13595	124					
110	4.6	182	118	10.9	57	3359	3163		13595		0	0	0	0	0
120	5.3	162	115	11.4	58	3357	3170	26	13833	115					
130	6.0	140	106	11.8	59	3146	3163	24	13595	105					
								TOTAL YIELDS			4009		3163		13595

MINIMUM CUTS FOR INCLUSION IN TOTAL YIELDS-- 500. CUBIC FEET AND 1500. BOARD FEET

DWARF MISTLETOE INFECTION STARTED AT AGE 15. AND RATING WAS 6.0 AT AGE 130.

NOTE THAT NOT ALL SCHEDULED THINNINGS WERE POSSIBLE.

MERCH. CU. FT. - TREES 6.0 INCHES D.B.H. AND LARGER TO 4.0-INCH TOP.

BD.FT. - TREES 6.5 INCHES D.B.H. AND LARGER TO A 6-INCH TOP.

ELK CR.POUDRE ROOSEVELT N.F.

S&PF LODGEPOLE PINE WITH MISTLETOE- YIELD PER ACRE
SITE INDEX 60. 50-YEAR CUTTING CYCLE
THINNING INTENSITY- INITIAL- 70. SUBSEQUENT- 70.

		ENTIRE STAND BEFORE AND AFTER THINNING									PERIODIC INTERMEDIATE CUTS				
STAND AGE YEARS	DWARF MST RATE	TREES NO.	BASAL AREA SQ.FT.	AVERAGE D.B.H. IN.	AVERAGE HEIGHT FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME C.FT	MERCHANTABLE VOLUME CF/YR	SAWTIMBER VOLUME B.FT	SAWTIMBER VOLUME BF/Y	TREES NO.	BASAL AREA SQ.FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME CU.FT.	SAWTIMBER VOLUME BD.FT.
30	1.5	682	41	3.3	23	452	0	0	0	0					
30	.3	347	14	2.7	21	145	0		0		335	27	307	0	0
40	.7	338	36	4.4	28	500	0	0	0	0					
50	1.3	333	57	5.6	32	901	331	7	0	0					
60	2.0	330	78	6.6	38	1490	1023	17	0	0					
70	2.7	326	97	7.4	43	2102	1714	24	0	0					
80	3.4	314	112	8.1	47	2661	2330	29	9591	120					
80	3.4	314	112	8.1	47	2661	2330		9591		0	0	0	0	0
90	4.1	294	124	8.8	50	3147	2865	32	11757	131					
100	4.8	267	129	9.4	53	3426	3168	32	13181	132					
110	5.5	236	126	9.9	55	3479	3258	30	13696	125					
120	6.0	202	117	10.3	56	3299	3097	26	13049	109					
130	6.0	169	104	10.6	57	2968	2790	21	11877	91					
									TOTAL YIELDS				3275	2790	11877

MINIMUM CUTS FOR INCLUSION IN TOTAL YIELDS-- 500. CUBIC FEET AND 1500. BOARD FEET

DWARF MISTLETOE INFECTION STARTED AT AGE 15. AND RATING WAS 6.0 AT AGE 130.

NOTE THAT NOT ALL SCHEDULED THINNINGS WERE POSSIBLE.

MERCH. CU. FT. - TREES 6.0 INCHES D.B.H. AND LARGER TO 4.0-INCH TOP.

BD.FT. - TREES 6.5 INCHES D.B.H. AND LARGER TO A 6-INCH TOP.

ELK CR.POUDRE ROOSEVELT N.F.

S&PF LODGEPOLE PINE WITH MISTLETOE- YIELD PER ACRE
SITE INDEX 60, 50-YEAR CUTTING CYCLE
THINNING INTENSITY- INITIAL- 70. SUBSEQUENT- 80.

		ENTIRE STAND BEFORE AND AFTER THINNING									PERIODIC INTERMEDIATE CUTS				
STAND AGE YEARS	DWARF MST RATE	TREES NO.	BASAL AREA SQ.FT.	AVERAGE D.B.H. IN.	AVERAGE HEIGHT FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME C.FT	MERCHANTABLE VOLUME CF/YR	SAWTIMBER VOLUME B.FT	SAWTIMBER VOLUME BF/Y	TREES NO.	BASAL AREA SQ.FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME CU.FT.	SAWTIMBER VOLUME BD.FT.
30	1.5	682	41	3.3	23	452	0	0	0	0					
30	.3	347	14	2.7	21	145	0		0		335	27	307	0	0
40	.7	338	36	4.4	28	500	0	0	0	0					
50	1.3	333	57	5.6	32	901	331	7	0	0					
60	2.0	330	78	6.6	38	1490	1023	17	0	0					
70	2.7	326	97	7.4	43	2102	1714	24	0	0					
80	3.4	314	112	8.1	47	2661	2330	29	9591	120					
80	3.4	314	112	8.1	47	2661	2330		9591		0	0	0	0	0
90	4.1	294	124	8.8	50	3147	2865	32	11757	131					
100	4.8	267	129	9.4	53	3426	3168	32	13181	132					
110	5.5	236	126	9.9	55	3479	3258	30	13696	125					
120	6.0	202	117	10.3	56	3299	3097	26	13049	109					
130	6.0	169	104	10.6	57	2968	2790	21	11877	91					
									TOTAL YIELDS			3275		2790	11877

MINIMUM CUTS FOR INCLUSION IN TOTAL YIELDS-- 500. CUBIC FEET AND 1500. BOARD FEET

DWARF MISTLETOE INFECTION STARTED AT AGE 15. AND RATING WAS 6.0 AT AGE 130.

NOTE THAT NOT ALL SCHEDULED THINNINGS WERE POSSIBLE.

MERCH. CU. FT. - TREES 6.0 INCHES D.B.H. AND LARGER TO 4.0-INCH TOP.

BD.FT. - TREES 6.5 INCHES D.B.H. AND LARGER TO A 6-INCH TOP.

ELK CR.POUDRE ROOSEVELT N.F.

S&PF LODGEPOLE PINE WITH MISTLETOE- YIELD PER ACRE
SITE INDEX 60, 999-YEAR CUTTING CYCLE
THINNING INTENSITY- INITIAL- 999. SUBSEQUENT- 70.

ENTIRE STAND BEFORE AND AFTER THINNING

STAND AGE YEARS	DWARF MST RATE	TREES NO.	BASAL AREA SQ.FT.	AVERAGE D.B.H. IN.	AVERAGE HEIGHT FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME C.FT	MERCHANTABLE VOLUME CF/YR	SAWTIMBER VOLUME B.FT	SAWTIMBER VOLUME BF/Y
30	1.5	682	41	3.3	23	452	0	0	0	0
30	1.5	682	41	3.3	23	452	0		0	
40	2.2	670	61	4.1	30	894	0	0	0	0
50	2.9	658	83	4.8	33	1349	0	0	0	0
60	3.6	629	104	5.5	39	2005	672	11	0	0
70	4.3	584	122	6.2	44	2651	1481	21	0	0
80	5.0	527	133	6.8	47	3110	2295	29	0	0
90	5.7	461	138	7.4	49	3393	2767	31	0	0
100	6.0	391	133	7.9	51	3387	2917	29	0	0
110	6.0	328	123	8.3	52	3208	2848	26	11695	106
120	6.0	275	114	8.7	53	3012	2731	23	11185	93
130	6.0	230	104	9.1	54	2801	2575	20	10594	81

PERIODIC INTERMEDIATE CUTS

TREES NO.	BASAL AREA SQ.FT.	TOTAL VOLUME CU.FT.	MERCHANTABLE VOLUME CU.FT.	SAWTIMBER VOLUME BD.FT.
0	0	0	0	0

	TOTAL YIELDS	2801	2575	10594

MINIMUM CUTS FOR INCLUSION IN TOTAL YIELDS-- 500. CUBIC FEET AND 1500. BOARD FEET

DWARF MISTLETOE INFECTION STARTED AT AGE 15. AND RATING WAS 6.0 AT AGE 130.

NOTE THAT NOT ALL SCHEDULED THINNINGS WERE POSSIBLE.

MERCH. CU. FT. - TREES 6.0 INCHES D.B.H. AND LARGER TO 4.0-INCH TOP.

BD.FT. - TREES 6.5 INCHES D.B.H. AND LARGER TO A 6-INCH TOP.